DOCUMENT RESUME

ED 257 302 EC 172 730

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TITLE Epidemiological Studies of Behavior Disorders in Children: An International Survey.
PUB DATE Apr 85
NOTE 34p.; Paper presented at the Annual Convention of the Council for Exceptional Children (63rd, Anaheim, CA, April 15-19, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Behavior Disorders; Cross Cultural Studies; *Foreign Countries; *Incidence
IDENTIFIERS *Epidemiology

ABSTRACT

The investigation consisted of a review and summary of 25 epidemiological studies of behavior disorders from 16 foreign countries. The countries were Great Britain, Australia, New Zealand, Canada, Sweden, Denmark, Norway, Finland, Iceland, the Netherlands, France, West Germany, Bulgaria, Uganda, and Sudan. The findings show that prevalence rates for children in other countries tend to be much higher than in the United States and are more in harmony with the incidence figures for adult populations both in the United States and in other countries. Differences may be attributable to the fact that in the United States prevalence is generally determined by teacher estimates, whereas in other countries the assessments are much more often made by psychiatrists. Further, foreign studies tended to use a broader range of information than their American counterparts. The evidence gained from international research supports the contention that the occurrence of moderate to severe behavior disorders is about twice as high as the ten percent figure usually quoted in American professional literature and very much higher than the less than one percent receiving any attention through special education or mental health services. (Author/CL)

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EPIDEMIOLOGICAL STUDIES OF BEHAVIOR DISORDERS IN CHILDREN: AN INTERNATIONAL SURVEY

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ABSTRACT

The investigation consisted of a review and summary of 25 epidemiological studies of behavior disorders from 16 foreign countries. The countries were Great Britain, Australia, New Zealand, Canada, Sweden, Denmark, Norway, Finland, Iceland, the Netherlands, France, West Germany, Bulgaria, Uganda, and Sudan. The findings show that prevalence rates for children in other countries tend to be much higher than in the United States and are more in harmony with the incidence figures for adult populations both in the United States and in other countries. One reason for the differences may be the fact that in the United States prevalence is generally determined by teacher estimates, whereas in other countries the assessments are much more often made by psychiatrists.

Epidemiological Studies of Behavior Disorders in Children: An International Survey

There has for some years been a great uncertainty both in the United States and in other countries with regard to the identification, education, and treatment of children who are variously described as maladjusted, emotionally disturbed, or behavior disordered. In contrast to other disabilities there is a large difference between the percentage of children identified as behavior disordered in epidemiological studies and the percentage served in schools and by mental health agencies. Alarmed by this situation, the European Association for Special Education passed in 1983 a resolution urging both UNESCO and individual governments to take action to combat the increasing problem of maladjustment among children and youth.

In the United States, the Fifth Annual Report to Congress on the Implementation of Public Law 94-142, published by the U.S. Department of Education (1983) shows that .85 percent of children enrolled in school receive special education services under the category of "emotionally disturbed".

In their national needs analysis in behavior disorders, Huntze and Grosenick (1980) found that 35 states provide special education for less than .5 percent, 9 states between .5 and 1.0 percent, 4 states between 1.0 and 2.0 percent, and 2 states above 2.0 percent of school children diagnosed as behavior disordered.

These statistics are sharply at variance with the presumed incidence of maladjustment according to most epidemiological research over the years. The most extensive source of information on the topic in the United States is a 1968 report written by Glidewell and Swallow (1968) at the request of the Joint Commission on the Mental Health of Children. The report consists of a summary of 27 studies conducted between 1922 and 1967 regarding the prevalence of maladjustment in school children. The results indicated that 30.2 percent of children showed some degree of school maladjustment, 10.5 percent evidenced clinical disturbance, and 3.8 percent were in need of psychiatric referral.

There have been very few subsequent investigations. However, Kelly, Bullock, and Dykes (1977) found that out of 2,664 children in their study 12.6 percent had mild, 5.6 percent moderate, and 2.2. percent severe behavior disorders. In a longitudinal investigation of 1,586 children from kindergarten through grade six Rubin and Balow (1978) found that 58.6 percent of the pupils had been rated as behavior disordered by at least one teacher and that 7.4 percent had been identified by every teacher over three years and more as having behavioral problems. Finally, Tisdale and Fowler (1983) explored the effects of labels on teachers' perceptions of the prevalence of emotionally disturbed children and youth. Responding to questionnaires labeled "behavior disordered" and "emotionally

disturbed" the teachers placed 22.1 percent in the first and 15.9 percent of their students in the latter category. When only moderately and severely affected children were considered, the percentages were 4.8 percent and 6.2 percent respectively.

It is of interest to note that all of these studies have relied almost exclusively on teachers' ratings as the basis for the assessment of behavior disorders, a procedure which raises some issues with regard to validity. In a survey of 25 prevalence studies prepared for the President's Commission on Mental Health (Dorenwend, Dorenwend, Gould, Link, Neugebaur, & Wunsch-Hitzig, 1980) four of the researches were based on parent interviews. They rendered a morbidity rating of 16.0 percent compared to 10.8 percent in the teacher ratings. The average percentages for both groups was 11.8. Epidemiological studies of children conducted by psychiatrists and relying on psychiatric judgments are apparently very rare in the United States.

This writer has for a number of years been interested in epidemiological studies on behavior disorders in other countries. He has been struck by several observations. First, there is a large number of studies reported in the literature both in English and in other languages. Secondly, many of these investigations are comprehensive and use multidisciplinary and multimethod procedures including parent questionnaires and interviews, physical examinations, psychological testing, school

evaluations, and psychiatric assessment. Thirdly, when parents, psychologists, and psychiatrists participate, the prevalence scores on behavior disorders tend to increase. Fourthly, the statistics indicate that in other countries the frequency of behavior disorders is often as high as or higher than in the United States. Finally, few if any of these studies are ever mentioned by American authors dealing with the topic of the prevalence of behavior disorders in children.

In this report, a selection has been made of about 30 out of more than 60 researches about which this writer has information. They were selected either because they were the only studies available from a specific country or because they were representative or outstanding in some way. They are also restricted to global estimates of behavior disorders, which automatically excludes numerous studies dealing with specific problems such as juvenile delinquency and autism.

Great Britain

From great Great Britian alone there are at least 25 epidemiological studies going back to 1934. Several of them were conducted under the auspices of the Ministry of Education. The most comprehensive project is the National Child Development study which consists of periodic follow-up of all the 17,000 children in the country born during a certain week in 1958. Much attention has also been given the Isle of Wight study

headed by Rutter in which all the 2,000 10 year olds on the island were examined for all kinds of handicapping conditions.

Three of the British studies have been chosen for this presentation. In the first (Rutter, Cox, Tupling, Burger, & Yule, 1975) all the 1,279 10 year olds on the Isle of Wight were compared with a matched group of 1,689 10 year old boys and girls from schools in a culturally deprived area of London. The assessment procedures consisted of the Rutter Children's Behavior Questionnaire completed by teachers and parents and psychiatric interviews with children and their parents. On the Isle of Wight 12.0 percent and in London 25.4 percent of the students were considered to have psychiatric disorders.

In London, Rutter found considerable differences in the frequency of psychiatric disorders in the different schools. He later embarked on a sociological investigation into the factors that might be involved in the dissimilar prevalence rates. The results have been published in the provocative book Fifteen Thousand Hours: Secondary Schools and their Effects on Children (1979).

In a sustained inquiry for information to provide special services for children with psychiatric disorders in Newcastle upon Tyne and Gatehead in England a team of psychiatrists, psychologists and social workers conducted two screenings of the child population.

The first inquiry (Kolvin, Garside, Nicol, Leitch, & Macmillan, 1977) included a thousand 7-8 year olds. The multiple criterion screen employed comprised the Rutter Behavior scale, rated by teachers; a sociometric tests; the reading quotient on a reading test, and absenteeism. The results indicated that 6.8 percent were markedly maladjusted and 33.7 percent somewhat maladjusted.

In the second screening (Macmillan, Kolvin, Garside, Nicol, & Leitch, 1980) a total of 3,300 11-12 year olds were tested. Again the Rutter Behavior scale and the sociometric test were used with the addition of a self-rating with the Junior Eysenck Personality Inventory. To check the efficiency of the screen criteria in identifying the genuinely disturbed children the scores together with other school based information and data from parent interviews were examined by the research psychiatrists. The overall estimated prevalence rate was 24.8 percent.

As part of a national project to look for remedies for psychiatric disorders, 14.0 percent of the students who had taken part in the prevalence studies were assigned to different kinds of treatment groups. The positive results of this intervention have been recorded in the book Help Starts Here. The Maladjusted Child in the Ordinary School (Kolvin, Garside, Nicol, Macmillan, Wostenholme, & Leitch, 1981).

In Northern Ireland, the teachers in a primary school in Belfast completed the Rutter Children's Behavior Questionaire on all their more than 600 pupils. The results showed that 14.6 percent presented

behavior problems, and an additional 6.0 percent were rated as seriously disturbed (Wilson & Irvine, 1976).

Australia

In Australia Connell, Irvine and Rodney (1982) conducted a study of child psychiatric disorders in an isolated rural area, in two coastal towns and in metropolitan Brisbane. The children consisted of about 900 10 and 11 year olds about equally divided among the three groups. The procedure included initial screening by means of the questionnaire developed by Rutter and Graham which was filled out by the parents and the child's teacher. If the scores on either questionnaire indicated psychiatric disorder, the child and the parents were interviewed for further determination.

The results showed that 10.0 percent of the rural, 15.1 percent of the urban, and 18.4 percent of the metropolitan children had psychiatric disorders. In the urban and metropolitan populations, the occurrence of emotional disorders was higher than that of conduct disorders, whereas in the rural sample the opposite was true. The report gave the sex differences only for the rural children. Slightly more girls than boys came within the psychiatric classification.

In another Australian study (Krupinski, Baikie, Stoller, Graves, O'Day, & Polke, 1967) The total population of about 2,000 in a country town was examined for a general health survey which included psychiatric disorders. The field work was carried out by advanced medical students who visited every household and interviewed all

family members in the community.

The pre-adult subjects were divided into three groups: children, male adolescents, and female adolescents. Among the children, 3.6 percent were given a combined medical and psychiatric diagnosis and 7.4 percent a psychiatric diagnosis alone. For the male and female adolescents the ratings were 4.1 and 12.3 percent and 16.7 and 3.3 percent respectively. In addition, 40.1. percent, 45.9 percent, and 60.5 percent of the individuals in the three groups respectively were diagnosed as having psychoneurotic symptoms that were not severe enough to qualify for a psychiatric diagnosis.

New Zealand

An investigation on the epidemiology of behavior disorders among 7 year olds was conducted in New Zealand as part of a comprehensive multidisciplinary child development study (McGee, Silva, & Williams, 1984). A sample of 951 children was drawn from a total of 1661 infants born during a one year period in a district of Dunedin. Parents and teachers filled out the Rutter Child Scale.

The data revealed that 17.3 percent of the children were identified by the parents only as having behavior problems, 8.9 percent by the teachers only, and 5.5 percent by both parents and teachers. About 7.4 percent of the boys and 3.5 percent of the girls were classified as "antisocial". With regard to the "neurotic" and "unclassified" categories, the two sexes were quite equal.

Canada

The Saskatchewan Commission on Emotional and Learning Disorders

carried out in 1968 a survey covering the grades one to eight. All the teachers of these grades in the province rated selected pupils on a scale 1 to 6 according to the severity of emotional disturbance. The sample consisted of children born on the first day of any month. In all, 5,531 completed forms were analyzed. They represented about three percent of the provincial child population. The results showed that in the judgement of the teachers 8.6 percent of the children were emotionally disturbed. Of these, 3.7 percent needed extra teaching, 3.1 percent required special classes, and 1.8 percent were recommended for residential placement. Of the total number of 475 emotionally disturbed children, 301 were boys and 174 girls (France, 1968).

In Vancouver, the 1,651 classroom teachers of 51,739 children 5 to 14 years of age were asked to fill out a questionnaire about the children who needed help for emotional and learning disorders beyond that which could be provided in the classroom. A mean rate of 8.2 percent of children was found. Boys rated higher than girls, and children from the lower economic areas showed a significantly higher incidence of emotional and learning disordered than those from the upper economic levels (Nicol, 1980).

Scandinavia

A unique characteristic of epidemiological research on behavior disorders in the Nordic countries is the fact that so many of them have been conducted by physicians and particularly by psychiatrists. Their special orientation towards the symptomatology and definitions

of psychiatric disorders may in part account for the high prevalence rates found in their investigations.

Sweden

As chief medical officer in Gotenburg public schools, Gedda (1948) wished to identify children who showed neurotic behavior disorders to such a degree that they became the concern of parents and teachers or were observed by the school physician.

The population consisted of all the 879 first-graders in one of the city's school divisions. The assessment took the form of medical examinations, interviews with parents and teachers, and information from school records.

The results indicated that 44.5 percent of the pupils had behavior disorders, with 47.5 percent of the boys and 41.5 percent of the girls thus identified.

In a follow-up four years later (Gedda, 1953), it was found that 19.2 percent of the children included in the maladjusted group no longer had neurotic symptoms, 29.7 percent were improved, 21.0 percent remained the same, 9.2 percent had become worse, and 21.0 percent had moved away. Of the original symptom-free group, 25.0 percent had developed neurotic symptoms. Several cases were also discovered that should have been in the behavior disordered group in the first grade. With those adjustments made, 45.9 percent of the children in the total group were diagnosed as behavior disordered in the first grade and 52.1 percent in the fourth grade. On the positive side, the number of children in the maladjusted group whose

symptoms had declined was considerably higher than those whose symptoms had increased.

Gustav Jonsson was for many years the director of the famous Children's Village at Ska, near Stockholm. A radical psychiatrist, he was a gadfly in awakening the conscience of the Swedish people to the plight of many of the nation's children. In 1964, Jonsson and Kälvesten published a study of 222 boys randomly selected from a register of children born in Stockholm during the period 1939-1946 and who were from 7.5 to 16.5 years old at the time of the investigation. The assessment consisted of somatic and psychiatric examinations, psychological testing, interviews with both parents, a home visit, and information from the school. The battery also included one intelligence measurement and three projective tests. The results showed that 23.0 percent of the boys had mild and 31.0 percent had moderate psychiatric symptoms, 23.0 percent were described as problem children, and 2.0 percent were institutionalized.

Denmark

The Danish National Institute of Social Research began in 1967 a survey of behavior disorders in children (Nord-Larsen & Vedel-Peterson, 1976). The population studies consisted of 9 to 12 year old children from 300 public school classes in the city of Copenhagen and in the County of Randers. The method of screening consisted of having the teachers select children in their classes who had adjustment difficulties to such an extent that the teachers had concern about their future development. As a second step, the

school psychologists had exhaustive discussions with the teachers and rated the children on an adjustment scale. In all, 641 children or 8.6 percent of the pupils in the sample were determined to be problem children. The lowest proportion of 5.5 percent were found in the rural areas, 8.5 percent in the towns, and 10.6 percent in the metropolis. Thus maladjustment increased with residential density. Moreover, twice as many boys as girls were considered behavior disordered.

A control group of 527 children without behavior problem was also selected for comparisons, and comprehensive data on the educational, medical, and social background of all the children were collected.

Seven years later, a follow-up study was made to determine the extent to which childhood problems continued into adolescence (Nord-Larsen, 1977). Eighty percent of the original sample were available for the investigation. Information was gathered from the schools, social registers, and the child and youth welfare authorities. The results showed that the children with problems in childhood continued to have difficulties in adolescence. Compared with the control group, three times as many left school before completion of regular schooling, had occupational problems, and were known to the welfare authorities. Six times as many had committed serious legal offences. It was also revealed that the more severe the problems were in childhood, the more serious the adjustment difficulties were later on.

Kastrup (1977), director of the Institute of Psychiatric Demography in Aarhus, Denmark, conducted a study to find the frequency of behavior, emotional, and somatic problems among 5-6 year old preschool children in an urban and a rural area. The subjects consisted of 119 children randomly selected in Aarhus and the total number of 58 six year olds on the island of Samso. The assessment included the children's health and psychiatric records, parent interviews, and an individual personal evaluation by the investigator, a psychiatrist. Behavior was defined as deviant if it occurred among less than 10.0 percent of the children studied. It was determined that 8.0 percent of the Aarhus children and 11.0 percent of the Samso children had psychiatric problems and that a further 16.0 percent and 14.0 percent respectively had minor behavioral and emotional problems. Boys had significantly more symptoms of psychiatric disorders than girls.

Norway

Haugestad (1971), a psychiatrist, evaluated in his capacity as the school physician for a rural school district near Oslo all the children in the first, fourth, and seventh grades. They numbered 183, 153, and 132 respectively. The assessment was made in the form of a routine medical examination in which a discussion of difficulties at home and at school was encouraged. The parents were invited to be present. If problems appeared to exist, subsequent interviews took place with the parents alone. The investigator also talked with the homeroom teachers.

In the first grade 31.5 percent of the boys and 19.8 percent of the girls had behavioral or psycho-somatic disturbances. In the fourth grade, the percentages were 20.0 and 27.9 percent and in the seventh grade 20.7 and 8.1 percent. The total scores for the first, fourth, and seventh grade were 25.7 percent, 23.5 percent, and 13.6 percent. It was observed that when parents contributed information from home, the scores for problem behaviors went up. The lower score for the girls in the seventh grade was believed to be a reflection of a decreased participation from the parents.

Lavik (1977), aimed his investigation at the mental health status of adolescents in an urban and a rural setting and on the relationship between mental health and social factors, family relationships, school situations, leisure time activities, and somatic factors. The sample consisted of 382 sixteen year olds from four different school areas in Oslo, Norway, and 101 of the same age from a remote rural area. The data were gathered by means of semi-structured pyschiatric interviews, a questionnaire given the students, and information gained from school personnel, doctors and nurses. The results showed that 19.5 percent of the urban and 7.9 percent of the rural adolescents show marked and severe symptoms of psychiatric disorders. With regard to sex, in Oslo, 23.1 percent of the boys and 15.9 percent of the girls were placed in the above categories whereas in the rural setting, 7.7 percent of the boys and 8.2 of the girls were thus classified. In both geographic

settings the students with psychiatric problems were overwhelmingly found in the lowest academic tracks. In Oslo, the frequency of psychiatric disorders was high where the father was in an unskilled occupation, and in both the urban and rural groups between one third and one fourth of the cases of maladjustment occurred in situations where the father was dead or his occupation unknown.

Kolstad (1980a) has conducted several studies in a thinly settled county in Western Norway. The number of children between 0 and 19 years of age was about 30,000. In one survey, he had 83 teachers, chosen at random from 5 typical communities, complete a questionnaire about the pupils they believed were in need of help for psychological problems. The teachers estimated that of the 3,500 children with whom they had contact, 5 percent needed mental health assistance.

In a companion study of 1306 pupils, the 79 homeroom teachers filled out a symptom checklist for each child in their class. With the criteria used, 8.5 percent had mild, 4.0 percent had moderate, and 4.3 percent had serious symptoms of maladjustment (Kolstad, 1980b).

Based on a similar checklist given to the parents of 477 children, 15.7 percent were classified as having mild, 6.9 percent as having moderate, and 4.2 percent as having serious problems of adjustment. The tendency for parents to rate more children as maladjusted than the teachers do has also appeared in some American and British investigations.

Iceland

Bjornsson (1980) started in 1965 a longitudinal study of the prevalence of psychological disturbances and behavior problems in children and youth in Reykjavik, the capital of Iceland. The original group consisted of 1,100 children ages 5 to 15, evenly distributed as to age and sex. Data were collected based on psychological testing of children and intensive interviews with the mothers. Subsequently, information was gained on school achievement, educational status, registered delinquency, occupational and marital status, and mental health in adulthood. Psychological assessment of the offspring of the original subjects has also begun.

The children were divided into three groups: good, fair, and bad mental health. In all, 18.8 percent were placed in the seriously disturbed group. The rate for boys was 21.1 percent and for girls 16.6 percent. The mental health of the children was significantly associated with paternal educational and occupational status, and maternal attitudes of warmth and emotional involvement.

In 1975, the 600 oldest subjects of the sample, then aged 19-25 years, were assessed with regard to their delinquency records. Fifteen percent had been involved in minor and three percent in serious delinquency. In the latter category, 5.7 percent of the boys and only 0.3 percent of the girls had officially recorded infractions of the law. A disproportionate percentage of delinquency occurred among individuals who came from broken homes and from the lower occupational classes.

Finland

In Helsinki, the child psychiatrist, Wiherheimo, evaluated in 1958 250 five to six year olds randomly selected from the population register. The children were tested with the Binet Intelligence Test as well as with the Children's Apperception and the Szeno Tests as personality measures. The mothers were also interviewed. The results indicated that essentially 59.0 percent were adjusted, 26.0 percent were in need of observation with maternal support from a counseling center, 10.0 percent needed treatment in a counseling center, 2.0 percent qualified for placement in an institution, while 1.0 percent were already institutionalized (Jonsson & Kälvesten,1964).

The Netherlands

In the industrial city of Enschede in the Netherlands, Bladergroen conducted in 1957 a study under the auspices of the Department of Child Psychology at the University of Groningen. The sample included 1,495 seven to eight year old children. All the pupils were given a school readiness assessment consisting of a draw a human figure and a tree test and a sentence completion test. The parents and the teachers filled out a questionnaire. On the basis of the results, 360 children were selected for additional testing with the Binet Intelligence Test. The findings indicated that 14.0 percent of the children needed adapted instruction in their own school, 10.0 percent needed modified instruction in a special school, 5.0 percent qualified for referral to a counseling center, 1.0 percent needed placement in a special class, while .5 percent

needed placement in a school for psychopathic children (Jonsson & Kälvesten, 1964).

France

At the famous Alfred Binet Center in Paris, the psychiatrist Chiland has since 1962 carried out a longitudinal mental health study of 66 children from the 13th arrondissement or district. In a 1973 report, she described 30.0 percent of the children as well adjusted, 40.0 percent as mildly to moderately maladjusted, and 30.0 percent as seriously afflicted with emotional difficulties. She evaluated the children by means of parent interviews, psychiatric examinations, psychological testing, and school information (Chiland, 1973).

West Germany

In West Germany, there have been about a dozen prevalence studies. Most of them consisted of instructions to teachers to list the children who persistently made teaching difficult. The percentages range from about 1.0 to over 10.0 percent. Only the two following investigations used more comprehensive evaluations.

In the first, a physican, von Harnack (1958), evaluated 674 boys and 661 girls ages 10 to 12 in the city of Hamburg. The assessment consisted of psychiatric examinations and interviews with parents and teachers regarding the occurrence of specific behaviors. The results showed that 19.6 percent of the boys and 12.8 percent of the girls had moderate behavior disorders and 5.9

percent of the boys and 12.8 percent of the girls had problems in adjustment. The combined maladjustment scores for boys was 25.5 percent and for the girls 14.3 percent with a total of 20.0 percent.

In Reutlingen, Thalman (1971) used the semi-structured interview methods developed by Jonsson and Kälvesten in Sweden to study a random sample of 150 boys from 7 to ten years of age. They represented 6.9 percent of the age group in the city. The results were strikingly similar to those obtained in the Swedish investigations: 28.7 percent had mild and 29.3 percent had moderate psychiatric symptoms, 18.3 percent were considered seriously disturbed, and 1.3 percent were in need of institutionalization.

Bulgaria

In Bulgaria, Bojonov (1974) conducted a study on the epidemiology and etiology of neurosis in children from three to seven years of age. The subjects consisted of 1,329 children in day centers or kindergartens in Sofia. The inquiry had four steps: 1) A parent interview covering their child's developmental history; their own marital adjustment, economic, education, and cultural level; and methods of upbringing, 2) reports by the preschool staff about the child's behavior, 3) medical and educational documentation, and 4) psychoneurological examination and observations during school work and free play.

The results showed that among the younger children 3 to 4.5 years of age, the neuroticism rate was 5.6 percent for boys and 5.7 percent for girls with a combined score of 5.6 percent.

For the older children aged 4.5 to 7 years, the rates were 9.0 percent, 7.11 percent and 8.01 percent respectively. The total score for boys was 7.3 percent, and for girls 6.3 percent, and for the whole group, 6.8 percent.

The major etiological factors were fears, inappropriate treatment in the family, family discord, deprivation, and inadequate handling in the day care centers. The findings also indicated that only or single children in a family were especially vulnerable to neuroses.

Uganda

Minde (1975), a Canadian psychiatrist, gave the Rutter Children's Behavior Questionnaire to the teachers of all 577 children between the ages of 7 and 15 in three different schools. The parents were given the Peterson-Quay Rating Scale. Both devices had been translated to the native language. The percentages of maladjustment in the three different schools were 10.5 percent, 19.0 percent, and 24.0 percent with an average score of 18.0 percent. Psychological problems were highest in the city school and lowest in a prospering rural community. The concordance between the teachers and parents on the presence or abscence of difficulties in their children is remarkably much higher than those found in European and American studies. It was also evident from the results that a significantly higher percentage of problem children came from families where more than two adults live in the house, either as co-wives or relatives.

Sudan

Cederblad (1968) surveyed three complete Sudanese

villages near Khartoum. All the 1,569 3 to 15 year old children were given a psychiatric evaluation, and their parents were interviewed by medical students. Thirteen percent of the boys, 3.0 percent of the girls had light symptoms of maladjustment, 22.0 percent of the boys and 19.0 percent of the girls had moderate symptoms, and 8.0 percent of both the boys and girls had serious problems. The total incidence of behavior disorders was 36.0 percent.

In a subsequent study of all the 1 to 15 year olds in a Sudanese village, Baasher and Ibrahim found that about 10.0 percent showed pronounced psychiatric symptoms that they felt might call for psychiatric consultation (Quay & Werry, 1979).

Findings

As a simple measure of finding the rates of the different degrees of maladjustment, five categories were established: non-specific, mild, moderate, severe, and total. For each of the studies the prevalence rates were fitted into one or more of these categories. In instances where only one maladjustment score was given without further clarification the category "non-specific" was used. In some instances two categories in a study were combined into one in the present survey.

To arrive at average rates, the scores for each category in all the studies were added up and divided by the number of studies. In some investigations, there were only partial scores for sub-populations, such as gender, rural or urban settings, grade placements, and parents and teachers as evaluators. On these occasions, each sub-population was registered as an independent study.

A comparison was made between the early American studies summarized

by Glidewell and Swallow (1968); the recent American studies by Kelly et al. (1977); Rubin and Balow (1978); and Tisdale and Fowler (1983); and the 25 foreign investigations. For the recent American studies the combined prevalence scores were: Mild - 22.2 percent, moderate - 4.7 percent, severe - 3.1 percent, and total - 29.3 percent. For the foreign studies the scores were: Non-specific - 15.9 percent, mild - 20.6 percent, moderate - 15.9 percent, severe - 9.2 percent, and total - 25.7 percent.

In the survey by Glidewell and Swallow there were in the 27 investigation, with three exceptions, only one category regarding the degree of maladjustment. Those described as school maladjustment were in the present study listed under non-specific, those listed as clinical maladjustment were placed in the category of moderate, and the referral group was made equivalent to severe maladjustment. The comparative data are shown in Table 1.

Table 1

Comparisons of Maladjustment Percentages of Early American, Recent American, and Foreign Studies

	Non-Specific	Mild	Moderate	Severe	Total
Early American (Glidewell & Swallow)	30.2		10.5	3.9	
Recent American (Kelly, Rubin, Tisdale)		22.2	4.7	3.1	29.3
Foreign	15.9	20.6	15.9	9.2	25.7

When the school maladjustment scores from the early American studies were compared with the total score of the three recent American studies they were almost identical, with 30.2 and 29.3 percent respectively. In the category of severe maladjustment the early and recent American surveys were also quite similar with 3.9 and 3.1 percent respectively. When the American studies were compared with the foreign investigations, the big contrast was found in the severe category in which the foreign scores was 9.2 percent which was between two and three times higher than in the American surveys. In the moderate category the foreign rates were also considerably higher with the early American score 10.5 percent, the recent American score 4.7 percent versus a foreign score of 15.9 percent. When the moderate and severe categories in the foreign group were combined the total was 25.1 percent, whereas in the recent American studies the score was 7.8 percent maladjustment.

At face value one may draw the conclusion that moderate and severe maladjustment is substantially higher in other countries than in the United States. However, a more plausible explanation may be found in looking at the procedures of assessment.

A substantial number of the foreign studies were conducted by physicians, and particularly psychiatrists. Almost without exception they would find higher incidences of maladjustment than would teachers. As an example, six of the nine Scandinavian investigations were under the direction of physicians. The average scores for this group were: Non-specific - 26.8 percent, mild - 26.7 percent, moderate - 23.0 percent, severe - 11.8 percent, and total 41.5 percent maladjustment.

Another important element was the large number of foreign investigations,

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in which parental judgment was included in the assessment. Seventeen out of the 25 studies included interviews with one or both parents, home visits, or questionnaires filled out by a parent. In two of the investigations the assessment of parents and teachers were compared. In the Australian study (McGee, Silva, & Williams, 1984) the parents rated 17.3 percent of their children as having behavior disorders whereas only 8.9 percent were thus identified by the teachers. Similarly, in the Norwegian study by Kolstad (1980b) 26.8 percent of the children were judged by their parents and 16.8 percent by their teachers as having psychological problems.

In their previously mentioned report to the President's Commission on Mental Health, Dorenwend et al. (1980) summarized 27 studies from North America and Europe on the prevalence of adult psychiatric disorders. They found that the median rate in the United States was 20.9 percent based on eight studies and 22.9 percent in Europe based on 19 studies from 10 countries. This leaves the adult morbidity rate about twice as high as that reported for children.

Conclusions

The survey gave evidence that throughout the world close to one third of the child population has some degree of maladjustment. However, when it comes to moderate and severe emotional problems, the rate in other countries appears to be over twice as high as in the United States and in concordance with the prevalence typically found in the adult population.

It is believed that the differences in the scores are based on several factors:

1. American prevalence studies have almost exclusively relied on teacher opinions and questionnaires. From their position and role their limited expertise to judge mental health problems, and the restricted settings in which they know their students, teachers may easily overlook the severity of the troubles some children have.

2. Foreign investigations are often conducted by psychiatrists who may be especially sensitive to symptoms of serious maladjustment in children.

3. In other countries a majority of the researchers include parent opinions in their assessment. Parents are known to find a much higher frequency of psychological problems in their children than their teachers do.

4. Foreign studies tend also in other ways to utilize a much broader range of information than their American counterparts. This included intelligence and personality testing, achievement tests and other school information, sociograms, data from social agencies and public records, etc. They may therefore bring to light problem areas that are not known to the teachers.

The evidence gained from international epidemiological research supports the contention that the occurrence of moderate to severe behavior disorders is about twice as high as the ten percent figure usually quoted in American professional literature and very much higher than the less than one percent receiving any attention through special education and mental health services.

These facts hopefully may provide ammunition in the struggle for a greater public recognition of the plight of such a high proportion of our children and youth, not only in the United States but throughout the world.

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